

In the specification:

**Please revise paragraph [0001] of Applicants' published application (which corresponds with page 1, lines 5-6 of Applicants' specification as filed) as follows:**

This application is a continuation-in-part of U.S. Serial No. 09/539,002 filed March 30, 2000, now U.S. Patent No. 6,628,982.

**Please revise paragraph [0002] of Applicants' published application (which corresponds with page 1, lines 8-10 of Applicants' specification as filed) as follows:**

This invention was made in the course [[o]] of research partially supported by a grant from the National Institute of Health (NIH CA 52880). The U.S. government has certain rights in the invention.

**Please revise paragraph [0007] of Applicants' published application (which corresponds with page 2, line 29 through page 3, line 12 of Applicants' specification as filed) as follows:**

This problem becomes more pronounced in situations where imaging data generated from PET or SPECT scans are to be integrated with imaging data derived from other methods such as, [[i.e.]] e.g., MRI, CT, or ultrasound. As described in Wahl et al., "Anatometabolic Tumor Imaging: Fusions of FDG PET with CT or MRI to Localize Foci of Increased Activity," J. Nucl. Med; 34 (7); 1190-1197, (1993) "metabolic" data generated from PET studies of specific anatomical regions have been fused with imaging data generated by MRI and/or CT to visualize "hot spots" generated by abnormal cellular activity. Such data have been registered to anatomical images generated by MRI and/or CT. In Thornton et al., "A Head Immobilization System for Radiation Simulation, CT, MRI, and PET Imaging," Medical Dosimetry; 16; 51-56, (1991), contour tubing is permanently mounted to immobilizing masks used in simulation planning and during radiation treatment for

both central nervous system and cranial and facial tumors. A suitable positron emission material such as a fluorine-18 solution is inserted in the tubes to provide a positron emission from the known external source. The authors describe an external marker system that provides a reference system for imaging correlation.

**Please revise paragraph [0024] of Applicants' published application (which corresponds with page 7, lines 26-27 of Applicants' specification as filed) as follows:**

Fig. 2 is a cross-sectional view of the visualizing device taken along the [[1-1]] 2-2 line of Fig. 1;

**Please revise paragraph [0052] of Applicants' published application (which corresponds with page 12, line 18 through page 13, line 2 of Applicants' specification as filed) as follows:**

In one embodiment, as depicted in FIGS. 1 and 2, the device 10 includes as a marker member, a flexible tubular lumen 12 which has an elongated central interior defined by a cylindrical wall 15. The flexible lumen 12 has a proximal end 14 and a distal end 16. The lumen 12 contains a suitable imaging material 17 in at least a portion of the central interior. The imaging material 17, as broadly contemplated in [[ihe]] the present invention, may be any ~~material~~ material which [[wiii]] will produce a discernable discernable image or assist in the production of a discernable image when subjected to one of the various scanning techniques described herein. The imaging material can be one that is echogenic, as would be the case with ultrasound imaging. For x-ray processes, and specifically for CT, the imaging material will possess a linear attenuation coefficient in excess of that of water. The imaging material can be one in which a discernable magnetic resonance or magnetic moment can be induced, as would occur in MRI. A radiopharmaceutical imaging material capable of producing an emission detectable external to the visually opaque

substance can be employed. The radiopharmaceutical imaging material is one which will produce a positron or single photon emission.

**Please revise paragraph [0053] of Applicants' published application (which corresponds with page 13, lines 3-26 of Applicants' specification as filed) as follows:**

In the embodiment depicted in FIGS. 1 and 2 and described herein, the distal end 16 of the flexible tubular lumen 12 is configured to be removably insertable in the visually opaque substance relative to the interior structure to be visualized. Thus, the distal end 16 of the flexible tubular lumen 12 may be configured and equipped with suitable means to facilitate insertion of the distal end 16 into the visually opaque substance. Preferably, such insertion facilitating means is capable of ensuring removable nondestructive insertion of the flexible lumen. As used herein, the term "nondestructive insertion" is taken to mean that the insertion process occurs without damage to the lumen and with minimal or no trauma to the material surrounding the region into which the lumen 12 is inserted. It is generally envisioned that the lumen 12 is inserted into a vessel or a channel within the body such as, but not limited to, the upper or lower gastrointestinal tract, genitourinary or head and neck tissues or the like. The device may be used so as to rest in or define potential spaces in the body. As an example, one particular anatomical region of interest which can be advantageously analyzed using the device of the present invention is the esophagus. As depicted in FIG. 1, the insertion means is a directional tip 18 which may include suitable lubricant and guiding surfaces thereon. Alternately, the insertion facilitating means may include various gels, weights, or other devices which permit and facilitate the traverse of the distal end 16 of the flexible tubular lumen 12 into position in the cavity to be visualized. In order to insert the device of the present invention into position in the visually opaque substance, the device 10 as depicted in FIGS. 1 and 2 can have a ~~device~~ device which imparts additional temporary ~~rigidity~~ rigidity to the

flexible lumen 12. One example of such a rigidity-imparting device would be a stylet or other thin rod.

**Please revise paragraph [0073] of Applicants' published application (which corresponds with page 19, line 21 through page 20, line 21 of Applicants' specification as filed) as follows:**

In the embodiment as illustrated in FIGS. 1 and 2, the radiopharmaceutical imaging material 17 is positioned in the inner cavity defined by inner wall [[14]] 15 of the flexible tubular lumen 12. It is anticipated that the radiopharmaceutical imaging material 17 is contained in the flexible tubular lumen 12 in a manner which can facilitate its movement relative to the longitudinal axis of the flexible tubular lumen 12. In this embodiment, the radiopharmaceutical imaging material 17 is contained in a suitable substrate which can be translationally positioned along the longitudinal axis of the flexible tubular lumen 12 as desired. This substrate can be any material capable of movement relative to the longitudinal axis of the flexible tubular lumen 12. Thus, it is contemplated that the radiopharmaceutical imaging material 17 may be contained in a suitable polymeric rod or shaft (not shown) which is capable of translational movement relative to the tubular lumen 12. In such instances, the rod containing radiopharmaceutical imaging material therein or thereon may be separately insertable into the tubular lumen 12 after positioning of the lumen 12 in the cavity of the visually opaque substance to be imaged. Alternately, the rod containing the radiopharmaceutical imaging material may be employed as a flexible stylet which can be used during the initial positioning process. Because the rod is translationally moveable relative to the lumen 12, it is contemplated that the entire rod need not be visually active. A portion of the rod can be detectably active or capable of being rendered detectably active. This portion can be brought into the desired position by translational movement of the rod relative to the lumen 12 once the lumen 12 is in position in the subject. Where a removable rod containing radiopharmaceutical imaging material 17 is employed as part of the device 10 of the present invention, it is

contemplated that the radiopharmaceutical imaging material 17 may be one which can be rendered detectably active by suitable excitation techniques prior to the positioning of the radiopharmaceutical imaging material in the subject. Alternately, the radiopharmaceutical imaging material is one which can be rendered detectable once the device is in place. As used herein, the term "rendered detectable" is defined as being made capable of providing a physically detected signal which can be translated into a suitable visual and/or mathematical or algorithmic representation. It is also within the scope of this invention that the rod, either flexible or rigid may be echogenic or capable of producing a magnetic resonance signal.